Claims

1. A method for detecting a tracer in a preparation, comprising:

contacting a sample of a preparation, wherein the preparation comprises a coloring agent and is suspected to comprise a tracer, with an effective amount of a precipitating agent to precipitate the coloring agent in the sample to yield a sample supernatant having a reduced concentration of coloring agent compared to the preparation; and

detecting the tracer in the sample supernatant.

2. The method of claim 1, wherein contacting the sample of the preparation comprises contacting the sample of the preparation having a coloring agent which interferes with detecting the tracer.

3. The method of claim 1, wherein contacting the sample of the preparation comprises contacting the sample of the preparation having a caramel coloring agent.

4. The method of claim 3, wherein contacting the sample of the preparation having the caramel coloring agent comprises contacting the sample of the preparation having a Type 1 caramel color.

5. The method of claim 4, wherein contacting the sample of the preparation with the effective amount of the precipitating agent to precipitate the Type 1 caramel color in the sample comprises contacting the sample of the preparation with the effective amount of at least one of a Type 2 caramel color and a Type 3 caramel color to precipitate the Type 1 caramel color in the sample.

6. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of precipitating agent to precipitate the coloring agent and not the tracer.

7. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of a cationic or quaternary surfactant or a polymer thereof.

8. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of a quaternary ammonium bromide.

9. The method of claim 8, wherein contacting the sample of the preparation with the effective amount of the quaternary ammonium bromide comprises contacting the sample of the preparation with an effective amount of myristyltrimethylammonium bromide (MYTAB).

10. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of a quaternary ammonium chloride.

11. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of a copolymer of a quaternary acrylate salt and acylamide.

12. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of a copolymer of sodium acrylate and acrylamide.

13. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent comprises contacting the sample of the preparation with an effective amount of at least one of a polyacrylamide and a polyamine.

14. The method of claim 1, wherein contacting the sample of the preparation comprises contacting a sample of a liquid consumable product.

15. The method of claim 14, wherein contacting the sample of the liquid consumable product comprises contacting a sample of a cola beverage.

16. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having the reduced

concentration of coloring agent comprises contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having a reduced concentration between 0 and 10 percent.

17. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having the reduced concentration of coloring agent comprises contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having a reduced concentration between 0 and 1 percent.

18. The method of claim 1, wherein contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having the reduced concentration of coloring agent comprises contacting the sample of the preparation with the effective amount of the precipitating agent to yield the sample supernatant having a reduced concentration between 0 and 0.1 percent.

19. The method of claim 1, wherein detecting the tracer comprises directly detecting the tracer.

20. The method of claim 1, wherein detecting the tracer comprises indirectly detecting the tracer.

21. The method of claim 1, wherein contacting the sample of the preparation, wherein the preparation is suspected to comprise the tracer, comprises contacting the sample of the preparation, wherein the preparation is suspected to comprise a food dye.

22. The method of claim 21, wherein contacting the sample of the preparation, wherein the preparation is suspected to comprise the food dye, comprises contacting the sample of the preparation, wherein the preparation is suspected to comprise FD&C Blue #1.

23. The method of claim 1, wherein contacting the sample of the preparation, wherein the preparation is suspected to comprise the tracer, comprises contacting the sample of the preparation, wherein the preparation is suspected to comprise a light-sensitive compound.

24. The method of claim 1, wherein contacting the sample of the preparation, wherein the preparation is suspected to comprise the tracer, comprises contacting the sample of the preparation, wherein the preparation comprises the tracer in 100-2000 parts per billion (ppb) of the preparation.

25. The method of claim 1, wherein the detecting the tracer comprises detecting an optical property of the tracer.

26. The method of claim 25, wherein detecting the optical property of the tracer comprises detecting absorbance or emittance of the tracer at a predetermined wavelength.

27. The method of claim 1, wherein contacting the sample of the preparation, wherein the preparation comprises the coloring agent, with the effective amount of the precipitating agent to precipitate the coloring agent in the sample to yield the sample supernatant having the reduced concentration of coloring agent compared to the preparation comprises contacting a sample of a liquid consumable product, wherein the liquid consumable product comprises a caramel coloring agent, with an effective amount of MYTAB to precipitate the caramel coloring agent in the sample to yield a sample supernatant having a reduced concentration of caramel coloring agent compared to the liquid consumable product.

28. The method of claim 27, wherein contacting the sample of the liquid consumable product, wherein the liquid consumable product comprises the caramel coloring agent and is suspected to comprise the tracer, comprises contacting the sample of the liquid consumable product, wherein the liquid consumable product comprises the caramel coloring agent and is suspected to comprise a food dye.

29. The method of claim 27, wherein contacting the sample of the liquid consumable product with the effective amount of MYTAB to precipitate the caramel coloring agent in the sample further comprises raising the pH of the sample.

30. A method for verifying authenticity of a preparation, comprising:

contacting an authentic sample of an authentic preparation, wherein the authentic preparation comprises a tracer in an authentic amount and a coloring agent, with an authentic effective amount of a precipitating agent to precipitate the coloring agent in the authentic sample to yield an authentic sample supernatant having an authentic reduced concentration of coloring agent compared to the authentic preparation;

detecting the tracer in the authentic sample supernatant;

contacting a test sample of a test preparation, wherein the test preparation comprises the tracer in a test amount and the coloring agent, with a test effective amount of the precipitating agent to precipitate the coloring agent in the test sample to yield a test sample supernatant having a test reduced concentration of coloring agent compared to the test preparation;

detecting the tracer in the test sample supernatant; and

determining the test preparation is authentic when the tracer in the test sample supernatant is within a predetermined range of the tracer in the authentic sample supernatant.

31. The method of claim 30, wherein contacting the authentic sample of the authentic preparation comprises contacting the authentic sample of the authentic preparation having a coloring agent which interferes with detecting the tracer, and wherein contacting the test sample of the test preparation comprises contacting the test sample of the test preparation having the coloring agent which interferes with detecting the tracer.

32. The method of claim 30, wherein contacting the authentic sample of the authentic preparation comprises contacting the authentic sample of the authentic preparation having a caramel coloring agent, and wherein contacting the test sample of the test preparation comprises contacting the test sample of the test preparation having the caramel coloring agent.

33. The method of claim 32, wherein contacting the authentic sample of the authentic preparation having the caramel coloring agent comprises contacting the authentic sample of the authentic preparation having a Type 1 caramel color and wherein contacting the test sample of the test preparation having the caramel coloring agent comprises contacting the test sample of the test preparation having a Type 1 caramel color.

34. The method of claim 33, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to precipitate the Type 1 caramel color in the authentic sample comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of at least one of a Type 2 caramel color and a Type 3 caramel color to precipitate the Type 1 caramel color in the authentic sample, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to precipitate the Type 1 caramel color in the test sample comprises contacting the test sample of the test preparation with the test effective amount of at least one of a Type 2 caramel color and a Type 3 caramel color to precipitate the Type 1 caramel color in the test sample.

35. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with an authentic effective amount of the precipitating agent to precipitate the coloring agent and not the tracer, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with a test effective amount of the precipitating agent to precipitate the coloring agent and not the tracer.

36. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of a cationic or quaternary surfactant or a polymer thereof, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the cationic or quaternary surfactant or the polymer thereof.

37. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of a quaternary ammonium bromide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting

the test sample of the test preparation with the test effective amount of the quaternary ammonium bromide.

38. The method of claim 37, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the quaternary ammonium bromide comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of myristyltrimethylammonium bromide (MYTAB), and wherein contacting the test sample of the test preparation with the test effective amount of the quaternary ammonium bromide comprises contacting the test sample of the test preparation with the test effective amount of MYTAB.

39. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of a quaternary ammonium chloride, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the quaternary ammonium chloride.

40. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of a copolymer of a quaternary acrylate salt and acylamide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the copolymer of the quaternary acrylate salt and acylamide.

41. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of a copolymer of sodium acrylate and acrylamide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent

comprises contacting the test sample of the test preparation with the test effective amount of the copolymer of sodium acrylate and acrylamide.

42. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of at least one of a polyacrylamide and a polyamine, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the at least one of the polyacrylamide and the polyamine.

43. The method of claim 30, wherein contacting the authentic sample of the authentic preparation comprises contacting an authentic sample of an authentic liquid consumable product, and wherein contacting the test sample of the test preparation comprises contacting a test sample of a test liquid consumable product.

44. The combination of claim 43, wherein contacting the authentic sample of the authentic liquid consumable product comprises contacting an authentic sample of an authentic cola beverage, and wherein contacting the test sample of the test liquid consumable product comprises contacting a test sample of a test cola beverage.

45. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having the authentic reduced concentration of coloring agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having an authentic reduced concentration between 0 and 10 percent, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 10 percent.

46. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having the authentic reduced concentration of coloring agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having an authentic reduced concentration between 0 and 1 percent, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 1 percent.

47. The method of claim 30, wherein contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having the authentic reduced concentration of coloring agent comprises contacting the authentic sample of the authentic preparation with the authentic effective amount of the precipitating agent to yield the authentic sample supernatant having an authentic reduced concentration between 0 and 0.1 percent, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 0.1 percent.

48. The method of claim 30, wherein detecting the tracer in the authentic sample supernatant comprises directly detecting the tracer in the authentic sample supernatant, and wherein detecting the tracer in the test sample supernatant comprises directly detecting the tracer in the test sample supernatant.

49. The method of claim 30, wherein detecting the tracer in the authentic sample supernatant comprises indirectly detecting the tracer in the authentic sample supernatant, and wherein detecting the tracer in the test sample supernatant comprises indirectly detecting the tracer in the test sample supernatant.

50. The method of claim 30, wherein contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises the tracer, comprises contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises a food dye, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the food dye.

51. The method of claim 50, wherein contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises the food dye, comprises contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises FD&C Blue #1, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the food dye, comprises contacting the test sample of the test preparation, wherein the test preparation comprises FD&C Blue #1.

52. The method of claim 30, wherein contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises the tracer, comprises contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises a light-sensitive compound, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the light-sensitive compound.

53. The method of claim 30, wherein contacting the authentic sample of the authentic preparation, wherein the authentic preparation is suspected to comprise the authentic tracer, comprises contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises the tracer in 100-2000 parts per billion (ppb) of the authentic preparation, and wherein contacting the test sample of the test preparation, wherein the test preparation is suspected to comprise the test tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the tracer in 100-2000 ppb of the test preparation.

54. The method of claim 30, wherein detecting the tracer in the authentic sample supernatant comprises detecting an optical property of the tracer in the authentic sample

supernatant, and wherein detecting the tracer in the test sample supernatant comprises detecting an optical property of the tracer in the test sample supernatant.

55. The method of claim 54, wherein detecting the optical property of the tracer in the authentic sample supernatant comprises detecting absorbance or emittance at a predetermined wavelength of the tracer in the authentic sample supernatant, and wherein detecting the optical property of the tracer in the test sample supernatant comprises detecting absorbance or emittance at a predetermined wavelength of the tracer in the test sample supernatant.

56. The method of claim 30, wherein contacting the authentic sample of the authentic preparation, wherein the authentic preparation comprises the coloring agent, with the authentic effective amount of the precipitating agent to precipitate the coloring agent in the authentic sample to yield the authentic sample supernatant having an authentic reduced concentration of coloring agent compared to the authentic preparation comprises contacting an authentic sample of an authentic liquid consumable product, wherein an authentic liquid consumable product comprises a caramel coloring agent, with an authentic effective amount of MYTAB to precipitate the caramel coloring agent in an authentic sample to yield an authentic sample supernatant having an authentic reduced concentration of caramel coloring agent compared to an authentic liquid consumable product, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the coloring agent, with the test effective amount of the precipitating agent to precipitate the coloring agent in the test sample to yield the test sample supernatant having the test reduced concentration of coloring agent compared to the test preparation comprises contacting a test sample of a test liquid consumable product, wherein a test liquid consumable product comprises a caramel coloring agent, with a test effective amount of MYTAB to precipitate the caramel coloring agent in a test sample to yield a test sample supernatant having a test reduced concentration of caramel coloring agent compared to the test liquid consumable product.

57. The method of claim 56, wherein contacting the authentic sample of the authentic liquid consumable product, wherein the authentic liquid consumable product comprises the tracer in an authentic amount, comprises contacting the authentic sample of the authentic liquid consumable product, wherein the authentic liquid consumable product comprises a food dye in the authentic amount and wherein contacting the test sample of the test liquid

consumable product, wherein the test liquid consumable product comprises the tracer in the test amount, comprises contacting the test sample of the test liquid consumable product, wherein the test liquid consumable product comprises a food dye in a test amount.

58. The method of claim 56, wherein contacting the authentic sample of the authentic liquid consumable product with the authentic effective amount of MYTAB to precipitate the caramel coloring agent in the authentic sample further comprises raising the pH of the authentic sample, and wherein contacting the test sample of the test liquid consumable product with the test effective amount of MYTAB to precipitate the caramel coloring agent in the test sample further comprises raising the pH of the test sample.

59. A method of quality validation of a preparation, comprising:

contacting a standard sample of a standard preparation, wherein the standard preparation comprises a tracer in a standard amount and a coloring agent, with a standard effective amount of a precipitating agent to precipitate the coloring agent in the standard sample to yield a standard sample supernatant having a standard reduced concentration of coloring agent compared to the standard preparation;

detecting the tracer in the standard sample supernatant to produce a standard result;

contacting a test sample of a test preparation, wherein the test preparation comprises the tracer in a test amount and the coloring agent, with a test effective amount of the precipitating agent to precipitate the coloring agent in the test sample to yield a test sample supernatant having a test reduced concentration of coloring agent compared to the test preparation;

detecting the tracer in the test sample supernatant to produce a test result; and

determining the test preparation is satisfactory when the test result is within a predetermined range of the standard result.

60. The method of claim 59, wherein contacting the standard sample of the standard preparation comprises contacting a standard sample of the standard preparation having a coloring agent which interferes with detecting the tracer, and wherein contacting the test sample of the test preparation comprises contacting the test sample of the test preparation having the coloring agent which interferes with detecting the tracer.

61. The method of claim 59, wherein contacting the standard sample of the standard preparation comprises contacting the standard sample of the standard preparation having a caramel coloring agent, and wherein contacting the test sample of the test preparation comprises contacting the test sample of the test preparation having the caramel coloring agent.

62. The method of claim 61, wherein contacting a standard sample of the standard preparation having the caramel coloring agent comprises contacting a standard sample of a standard preparation having a Type 1 caramel color, and wherein contacting the test sample of the test preparation having the caramel coloring agent comprises contacting the test sample of the test preparation having a Type 1 caramel color.

63. The method of claim 62, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to precipitate the Type 1 caramel color in the standard sample comprises contacting the standard sample of the standard preparation with the standard effective amount of at least one of a Type 2 caramel color and a Type 3 caramel color to precipitate the Type 1 caramel color in the standard sample, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to precipitate the Type 1 caramel color in the test sample comprises contacting the test sample of the test preparation with the test effective amount of at least one of a Type 2 caramel color and a Type 3 caramel color to precipitate the Type 1 caramel color in the test sample.

64. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with a standard effective amount of the precipitating agent to precipitate the coloring agent and not the tracer, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with a test effective amount of the precipitating agent to precipitate the coloring agent and not the tracer.

65. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of a

cationic or quaternary surfactant or a polymer thereof, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the cationic or quaternary surfactant or the polymer thereof.

66. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of a quaternary ammonium bromide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the quaternary ammonium bromide.

67. The method of claim 66, wherein contacting the standard sample of the standard preparation with the standard effective amount of the quaternary ammonium bromide comprises contacting the standard sample of the standard preparation with the standard effective amount of myristyltrimethylammonium bromide (MYTAB), and wherein contacting the test sample of the test preparation with the test effective amount of the quaternary ammonium bromide comprises contacting the test sample of the test preparation with the test effective amount of MYTAB.

68. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of a quaternary ammonium chloride, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the quaternary ammonium chloride.

69. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of a copolymer of a quaternary acrylate salt and acylamide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises

contacting the test sample of the test preparation with the test effective amount of the copolymer of the quaternary acrylate salt and acylamide.

70. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of a copolymer of sodium acrylate and acrylamide, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the copolymer of sodium acrylate and acrylamide.

71. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent comprises contacting the standard sample of the standard preparation with the standard effective amount of at least one of a polyacrylamide and a polyamine, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent comprises contacting the test sample of the test preparation with the test effective amount of the at least one of the polyacrylamide and the polyamine.

72. The method of claim 59, wherein contacting the standard sample of the standard preparation comprises contacting a standard sample of a standard liquid consumable product, and wherein contacting the test sample of the test preparation comprises contacting a test sample of a test liquid consumable product.

73. The combination of claim 72, wherein contacting the standard sample of the standard liquid consumable product comprises contacting a standard sample of a standard cola beverage, and wherein contacting the test sample of the test liquid consumable product comprises contacting a test sample of a test cola beverage.

74. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to yield the standard sample supernatant having the standard reduced concentration of coloring agent comprises contacting the standard sample of the standard preparation with the standard effective amount

of the precipitating agent to yield the standard sample supernatant having a standard reduced concentration between 0 and 10 percent, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 10 percent.

75. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to yield the standard sample supernatant having the standard reduced concentration of coloring agent comprises contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to yield the standard sample supernatant having a standard reduced concentration between 0 and 1 percent, and wherein or contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 1 percent.

76. The method of claim 59, wherein contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to yield the standard sample supernatant having the standard reduced concentration of coloring agent comprises contacting the standard sample of the standard preparation with the standard effective amount of the precipitating agent to yield the standard sample supernatant having a standard reduced concentration between 0 and 0.1 percent, and wherein contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having the test reduced concentration of coloring agent comprises contacting the test sample of the test preparation with the test effective amount of the precipitating agent to yield the test sample supernatant having a test reduced concentration between 0 and 0.1 percent.

77. The method of claim 59, wherein detecting the tracer in the standard sample supernatant comprises directly detecting the tracer in the standard sample supernatant, and

wherein detecting the tracer in the test sample supernatant comprises directly detecting the tracer in the test sample supernatant.

78. The method of claim 59, wherein detecting the tracer in the standard sample supernatant comprises indirectly detecting the tracer in the standard sample supernatant, and wherein detecting the tracer in the test sample supernatant comprises indirectly detecting the tracer in the test sample supernatant.

79. The method of claim 59, wherein contacting the standard sample of the standard preparation, wherein the standard preparation comprises the tracer, comprises contacting the standard sample of the standard preparation, wherein the standard preparation comprises a food dye, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the food dye.

80. The method of claim 79, wherein contacting the standard sample of the standard preparation, wherein the standard preparation comprises the food dye, comprises contacting the standard sample of the standard preparation, wherein the standard preparation comprises FD&C Blue #1, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the food dye, comprises contacting the test sample of the test preparation, wherein the test preparation comprises FD&C Blue #1.

81. The method of claim 59, wherein contacting the standard sample of the standard preparation, wherein the standard preparation comprises the tracer, comprises contacting the standard sample of the standard preparation, wherein the standard preparation comprises a light-sensitive compound, and wherein contacting the test sample of the test preparation, wherein the test preparation comprises the tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the light-sensitive compound.

82. The method of claim 59, wherein contacting the standard sample of the standard preparation, wherein the standard preparation is suspected to comprise the standard tracer, comprises contacting the standard sample of the standard preparation, wherein the standard preparation comprises the tracer in 100-2000 parts per billion (ppb) of the standard

preparation, and wherein contacting the test sample of the test preparation, wherein the test preparation is suspected to comprise the test tracer, comprises contacting the test sample of the test preparation, wherein the test preparation comprises the tracer in 100-2000 ppb of the test preparation.

83. The method of claim 59, wherein detecting the tracer in the standard sample supernatant comprises detecting an optical property of the tracer in the standard sample supernatant, and wherein detecting the tracer in the test sample supernatant comprises detecting an optical property of the tracer in the test sample supernatant.

84. The method of claim 83, wherein detecting the optical property of the tracer in the standard sample supernatant comprises detecting absorbance or emittance at a predetermined wavelength of the tracer in the standard sample supernatant, and wherein detecting the optical property of the tracer in the test sample supernatant comprises detecting absorbance or emittance at a predetermined wavelength of the tracer in the test sample supernatant.

85. The method of claim 59, wherein contacting the standard sample of the standard preparation, wherein the standard preparation comprises the coloring agent, with the standard effective amount of the precipitating agent to precipitate the coloring agent in the standard sample to yield the standard sample supernatant having a standard reduced concentration of coloring agent compared to the standard preparation comprises contacting the standard sample of a standard liquid consumable product, wherein a standard liquid consumable product comprises a caramel coloring agent, with a standard effective amount of MYTAB to precipitate the caramel coloring agent in a standard sample to yield a standard sample supernatant having a standard reduced concentration of caramel coloring agent compared to the standard liquid consumable product and wherein contacting the test sample of a test preparation, wherein the test preparation comprises the coloring agent, with the test effective amount of the precipitating agent to precipitate the coloring agent in the test sample to yield the test sample supernatant having the test reduced concentration of coloring agent compared to the test preparation comprises contacting a test sample of a test liquid consumable product, wherein a test liquid consumable product comprises a caramel coloring agent, with a test effective amount of MYTAB to precipitate the caramel coloring agent in a test sample to yield

the test sample supernatant having the test reduced concentration of caramel coloring agent compared to the test liquid consumable product.

86. The method of claim 85, wherein contacting the standard sample of the standard liquid consumable product, wherein the standard liquid consumable product comprises the tracer in the standard amount, comprises contacting the standard sample of the standard liquid consumable product, wherein the standard liquid consumable product comprises a food dye in the standard amount, and wherein contacting the test sample of the test liquid consumable product, wherein the test liquid consumable product comprises the tracer in the test amount, comprises contacting the test sample of the test liquid consumable product, wherein the test liquid consumable product comprises a food dye in the test amount.

87. The method of claim 85, wherein contacting the standard sample of the standard liquid consumable product with the standard effective amount of MYTAB to precipitate the caramel coloring agent in the standard sample further comprises raising the pH of the standard sample, and wherein contacting the test sample of the test liquid consumable product with the test effective amount of MYTAB to precipitate the caramel coloring agent in the test sample further comprises raising the pH of the test sample.

88. A method of analyzing a product, the product comprising a coloring agent and suspected of comprising a tracer, the method comprising:

contacting at least a sample of the product with an effective amount of a precipitating agent to precipitate the coloring agent in the sample to yield a supernatant of the product having a reduced concentration of coloring agent compared to the sample of the product; and

detecting the tracer in the supernatant of the product.

89. The method of claim 88, further comprising preparing a liquid preparation of at least a portion of the product if the product is in a non-liquid form, and wherein contacting the at least the sample of the product with the effective amount of the precipitating agent to precipitate the coloring agent in the sample to yield the supernatant having the reduced concentration of coloring agent compared to the sample comprises contacting the at least the sample of the liquid preparation of the product with the effective amount of the precipitating agent to precipitate the coloring agent in the sample of the liquid preparation to yield the

supernatant of the liquid preparation having the reduced concentration of coloring agent compared to the sample of the liquid preparation, and wherein detecting the tracer in the supernatant of the product comprises detecting the tracer in the supernatant of the liquid preparation of the product.

90. The method of claim 88, wherein contacting the at least the sample of the product with the effective amount of the precipitating agent to precipitate the coloring agent in the sample to yield the supernatant of the product having the reduced concentration of coloring agent compared to the sample of the product comprises contacting the product with the effective amount of the precipitating agent to precipitate the coloring agent in the product to yield the supernatant of the product having the reduced concentration of coloring agent compared to the product.

91. The method of claim 88, wherein detecting the tracer in the supernatant of the product comprises detecting a presence of the tracer in the supernatant of the product.

92. The method of claim 88, wherein detecting the tracer in the supernatant of the product comprises detecting a concentration of the tracer in the supernatant of the product.